# Models/Modelos/Modéles

SVB-E8, SVB-E8-2, SVB-E8EC, SVB-E8EXP, SVB-A8, SVB-G8, & SVB-G8P

Manual No. BLWR001 (Rev 1 September 2003)



# Operating Manual Manual de instrucciones Manuel d'utilisation



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Air Systems International, Inc.
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Certificate No. A5033



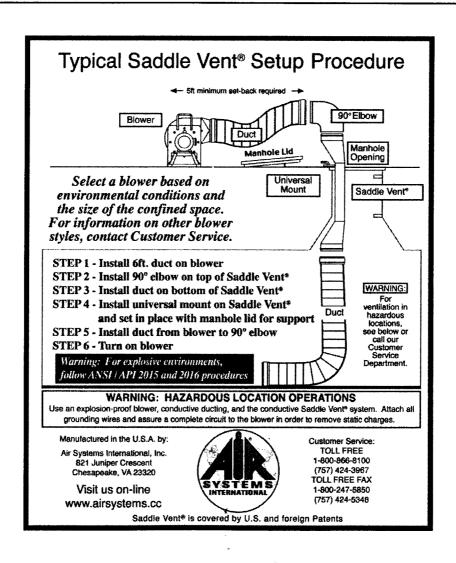
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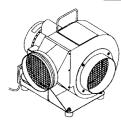
This series of portable ventilation blowers has been designed for industrial heavy duty applications in confined space ventilation. These blowers are the primary tool for providing fresh clean ventilation air to remote work locations. Each work environment should be thoroughly evaluated by a competent person before selecting the proper blower for a particular application.

# **⚠** SAFETY PRECAUTIONS: READ AND FOLLOW ALL INSTRUCTIONS

All ventilation procedures should comply with federal, state, and local regulations. Air quality should be tested prior to ventilating a confined space. A purge chart is provided on the ventilation equipment to help assist in estimating the approximate time needed to ventilate confined spaces. Air quality should be tested continuously during confined space occupancy to ensure a stable atmosphere and worker safety because atmospheric conditions can change rapidly. Additional procedures and recommendations are available from federal, state, and local agencies. **DO NOT** operate these blower units with the flange or grills removed. **DO NOT** USE STANDARD ELECTRIC, GASOLINE, OR PROPANE BLOWERS IF VOLATILE OR EXPLOSIVE VAPORS ARE SUSPECTED!



# GENERAL SETUP & OPERATION, ELECTRIC BLOWER SERIES MODELS SVB-E8, SVB-E8-2, & SVB-E8EC



#### STEP 1)

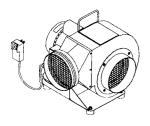
Place blower in a clean fresh air environment. Set blower a minimum of 5 ft. from the manhole opening. Note: Inspect blower for damaged or worn parts. Inspect all ducting and couplings for possible air leaks prior to blower operation.



Note: Air quality of the confined space should be tested prior to ventilation. If air quality of the confined space is unacceptable, consult a trained professional. (Model SVB-E8EC blower does not come standard with an intake flange. Intake flange can be purchased as an option from Air Systems Repair Service Department. Order part no. METL1960.

#### STEP 2)

Install duct cuff to exhaust flange and tighten cinch strap. Keep bends and kinks in ducting to a minimum to maximize air flow.



#### STEP 3)

Connect to 120 VAC, 15 amp, 60Hz dedicated service. All standard electric blowers listed are supplied with GFI plug (Ground Fault Interrupters) per the 1996 NEC code requirement: Section 305-6.

Note: If an extension cord is required, the minimum recommended size is 12 AWG (Maximum 100 ft.). For further information, refer to the National Electric Code Tables, Article 400. (The use of generators are not recommended unless they are of sufficient output capacity. Some generator's output current will not allow the use of GFI plugs. A standard 3-prong plug would need to be installed instead of the GFI recepticle).

STEP 4) Push "on/off" (reset) switch, located on the GFI unit, to the "on" position. The unit is now operational.

#### **SHUTDOWN**

- Insure that all workers are removed from the confined space site.
- Shut off blower and remove all ducting.

#### **MAINTENANCE**

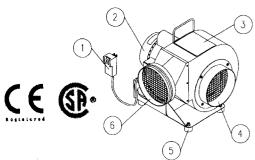
- Keep blower motor dry and free from contaminants and dust.
- Check periodically to ensure moving parts are free from obstructions.

#### **TROUBLESHOOTING**

PROBLEM	POSSIBLE CAUSE	SOLUTION
Excessive vibration	Air intake blocked	Turn blower off and clear debris from intake
	Possible internal damage	Turn blower off and inspect fan blades, shaft, and housing for debris, damage, and loose screws.
	Possible external damage	Turn fan off and inspect blower housing
Blower will not start	Circuit breaker trips	Wattage output of power source insufficient* Extension cord improperly sized
······································	Faulty wall outlet	Test voltage with meter
*Note: The use of generators are not recommended unless they are of sufficient output capacity.		

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# **MODEL SVB-E8 - Single Speed Electric Blower**



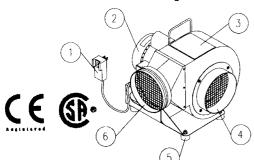
ITEM #	DESCRIPTION	PART#
1	GFI POWER CORD	ELCB013
2	SINGLE SPEED MOTOR	MTR002
3	HOUSING	METL038Y
*	BLOWER WHEEL	METL039
4	INTAKE FLANGE	METL040Y
5	RUBBER FEET	HDWR025
6	EXHAUST FLANGE	METL020Y

\*LOCATED INSIDE BLOWER HOUSING

#### **SPECIFICATIONS**

	212
MOTOR TYPE	3/4 HP (.56 kw) Electric, 115 VAC/60Hz, Single Speed,
	GFI Cord Installed
FULL LOAD	12 Amps
AMPERAGE	
FLOW RATE	Free Air: 1570 cfm
	25 ft. Duct with One 90 degree bend: 1047cfm
INLET/OUTLET	
SIZE	8" Diameter (203 mm)
WEIGHT	53 lbs.
NOISE LEVEL	76 dbA @ 3 ft.

# MODEL SVB-E8 - 2 Speed Electric Blower



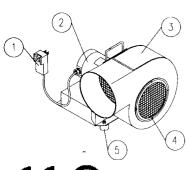
ITEM #	DESCRIPTION	PART#
1	GFI POWER CORD	ELCB013
2	2 SPEED MOTOR	MTR021
3	HOUSING	METL038Y
*	BLOWER WHEEL	METL039
4	INTAKE FLANGE	METL040Y
5	RUBBER FEET	HDWR025
6	EXHAUST FLANGE	METL020Y
7	BLOWER WHEEL	METL039

\*LOCATED INSIDE BLOWER HOUSING

#### **SPECIFICATIONS**

TOTOD DEVDE	3/4 HP (.56 kw) Electric, 115 VAC/60Hz, Dual Speed,
MOTOR TYPE	
	GFI Cord Installed
FULL LOAD	12 Amps
AMPERAGE	
FLOW RATES	Free Air: 750 Low/1570 High
	25 ft. Duct with One 90 degree bend: 490 Low/1047 High
INLET/ OUTLET	
SIZE	8" Diameter (203 mm)
WEIGHT	64 lbs.
NOISE LEVEL	76dbA @ 3 ft. High

# **MODEL SVB-E8EC - Economy Electric Blower**



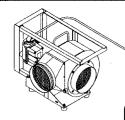
ITEM #	DESCRIPTION	PART#
1	GFI POWER CORD	ELCB013
2	SINGLE SPEED MOTOR	MTR040
3	HOUSING	METL200O
*	BLOWER WHEEL	METL202
	AIR INTAKE	•
4	SCREEN	METL2010
5	RUBBER FEET	HDWR025

\*LOCATED INSIDE BLOWER HOUSING

#### **SPECIFICATIONS**

	DI Bell Telli I e e e e e e e e e e e e e e e e e e
MOTOR TYPE	1/2 HP (.37 kw) Electric, 115 VAC/60Hz, Single Speed,
·	GFI Cord Installed
FULL LOAD	7.9 Amps
AMPERAGE	
FLOW RATES	Free Air: 1390 cfm
	25 ft. Duct with One 90 degree bend: 973 cfm
INLET/ OUTLET	
SIZE	8" Diameter (203 mm)
WEIGHT	37 lbs.
NOISE LEVEL	76dbA @ 3 ft.

# GENERAL SETUP & OPERATION, EXPLOSION-PROOF ELECTRIC BLOWER MODEL SVB-E8EXP



#### STEP 1)

Place blower in a clean fresh air environment. Set blower a minimum of 5 ft. from the manhole opening. Note: Inspect blower for damaged or worn parts. Inspect all ducting and couplings for possible air leaks prior to blower operation.

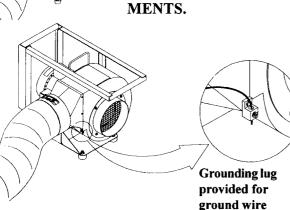
#### *↑ CAUTION:*

Air quality of the confined space should be tested prior to ventilation. If air quality of the confined space is unacceptable, consult a trained professional.

# STEP 2)

Install duct cuff to exhaust flange and tighten cinch strap. Keep bends and kinks in ducting to a minimum to maximize air flow. THE USE OF CONDUCTIVE DUCTING IS RECOMMENDED WHEN OPERATING IN POTENTIALLY EXPLOSIVE ENVIRON-

ASSURE THAT THE BLOWER IS PROPERLY GROUNDED BEFORE OPERATING AND THAT THE GROUNDING WIRE, IN THE CONDUCTIVE DUCTING IS ATTACHED TO THE BLOWER AND SADDLE VENT®, IF USED.



# CAUTION:

If explosive or volatile vapors are suspected or present, follow ANSI/API procedure 2015 and 2016 for proper grounding of the blower. All static electricity must be removed from the blower and attached ducting prior to energizing the blower. Conductive ducting should be tested semi-annually to assure resistance (ohms) does not exceed 300k. If sufficient resistance is not achieved, the duct should be removed from service.

#### STEP3)

Explosion-proof models should be fitted with an approved explosion-proof plug to meet Class I, Div. I, Groups C and D, Class II, Div. I, Groups E, F, G specifications. The plug should not be disconnected or connected in an explosive environment when the blower is energized.

STEP 4) Switch the explosion-proof "on/off" switch to the "on" position. The unit is now operational.

#### **SHUTDOWN**

• Insure that all workers are removed from the confined space site.

attachment from conductive duct.

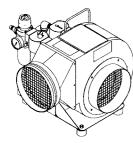
• Shut off blower and remove all ducting.

#### **MAINTENANCE**

- Keep blower motor dry and free from contaminants and dust.
- Check periodically to ensure moving parts are free from obstructions.

# GENERAL SETUP & OPERATION, PNEUMATIC BLOWER

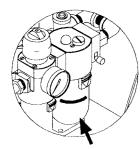
#### **MODEL SVB-A8**



#### STEP 1)

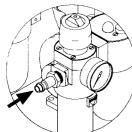
Operate blower <u>in vertical position only</u>. Place in a clean fresh air environment away from toxic gases and dust. Set blower a minimum of 5 ft. from the manhole opening. *Note: Inspect blower for damaged or worn parts. Inspect all ducting and couplings for possible air leaks prior to blower operation.* 

Note: Air quality of the confined space should be tested prior to ventilation. If air quality of the confined space is unacceptable, consult a trained professional.



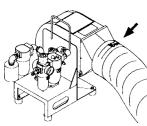
#### STEP 2)

Attach and tighten the filter/regulator and lubricator assembly. Make sure oil level in the lubricator is at the full mark (approximately 3/4 of bowl height); add additional oil if necessar. Factory recommended oil is SAE #10 detergent automotive engine oil or lighter. (Petroleum based only, do not use synthetic oils.)



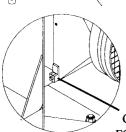
#### STEP 3)

Secure a primary air source with a flow capacity of 10 - 100cfm and a pressure range of 10 - 100psi. Attach a minimum 1/2" I.D hose to the inlet fitting. Note: Maximum inlet pressure should not exceed 150psi (10 bar).

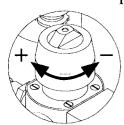


#### STEP 4)

Install duct cuff to exhaust flange and tighten cinch strap. Keep bends and kinks in ducting to minimum to maximize air flow. THE USE OF CONDUCTIVE DUCTING IS RECOMMENDED WHEN OPERATING IN POTENTIALLY EXPLOSIVE ENVIRONMENTS. Assure that the blower is properly grounded before operating and that the grounding wires from the ducting and Saddle Vent®, if used are securely attached to the blower's grounding wire.



GROUNDING LUG FOR GROUND WIRE



### CAUTION:

If explosive or volatile vapors are suspected or present, follow ANSI/API 2015 and 2016 procedures for proper grounding of the blower. All static electricity must be removed from the blower and attached ducting prior to energizing the blower.

Conductive ducting should be tested semiannually to assure resistance (ohms) does not exceed 300k. If sufficient resistance is not achieved, the duct should be removed from service.

#### STEP 5)

Adjust pressure regulator, clockwise to increase, counterclockwise to decrease motor speed. This adjustment will increase or decrease the air flow. *Note: Available air pressure (psi) and volume (cfm) will determine blower performance.* 



OIL DROP SIGHT GLASS

#### STEP 6)

The proper amount of oil mist has already been factory preset. However, depending on the viscosity the oil being used, slight adjustments may be necessary. With the blower running, the proper oil mist should be one drop/min. The oil mist adjustment screw is located next to the oil fill cap. Turn this screw clockwise to decrease or counterclockwise to increase oil flow. Note: Approximately 1 droper minute can be achieved by turning the adjustment screw fully clockwise and then turn counterclockwise 1 1/2 turns.

#### **SHUTDOWN**

- Insure that all workers are removed from the confined space site.
- Shut off blower and remove all ducting.

#### **MAINTENANCE**

- Keep blower motor dry and free from contaminants and dust.
- Check periodically to ensure moving parts are free from obstructions.
- Change filter (Part# WL040B) located in regulator after approximately 300 500 hours
- Use SAE #10 non-detergent automotive engine oil or lighter in lubricator at all times. (Do not exceed 10 weight oil). Heavyweight oils will cause damage to the air motor.
- Clean muffler assembly every 100-300 hours with safety solvent (Part #BAC-1001).
- Flush air motor every 100 hours with safety solvent (#BAC-1001) through maintenance port (see below).
- Remove air exhaust filter before flushing and reinstall after several minutes of running unit. Flush unit after every 200 hours or after storing for long periods.

# AIR MOTOR FLUSHING PROCEDURE

Use Air Systems' Part #BAC-1001 safety solvent.

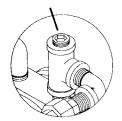
<u>Do not</u> use a flammable solvent or a solvent with a toxicity rating of 500ppm or greater to flush the unit.

Note: Eye protection should be worn when flushing the unit.

#### STEP 1)

**1AINTENANCE PORT** 

To flush the motor, turn off blower and remove the exhaust filter element (See page 10).



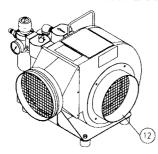
#### STEP 2)

Open the maintenance port, shown at left. Spray one or two ounces of safety solvent into the maintenance port. Close the maintenance port. Run the blower in an open area away from sparks and flames for a minimum of five minutes before reinstalling the exhaust filter.

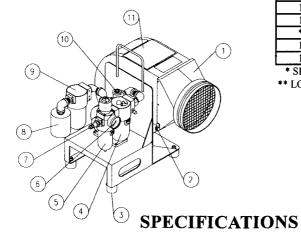
# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSÉ	SOLUTION	
Blower will not start	Insufficient pressure	Check pressure gauge on compressed air source to	
		ensure proper supply pressure. Turn regulator knob	
		clockwise to increase air pressure to air motor and	
		note the gauge pressure on the regulator.	
Excessive vibration	Possible internal damage	Turn blower off and inspect fan blades, shaft, and	
		housing for debris, damage, and loose screws.	
		Note: Never run blower for extended periods without	
		installing duct on the exhaust flange.	
	Possible external damage	Turn blower off and inspect housing	
Blower loses pressure	Insufficient air flow or	or Hose with a minimum 1/2" diameter is required at 10-	
	pressure	100cfm delivery volume	
		Remove muffler housing and unscrew internal air	
		muffler. Clean with safety solvent and reinstall.	
Motor icing (interior)	Excessive water in airline	e Install moisture separator filter before blower (order	
		Model #PF-240). Remove muffler and clean out ice	
		blockage and reassemble.	
Motor icing (exterior)	Very high humidity	Normal during hot weather	

#### **MODEL SVB-A8 Pneumatic Blower**







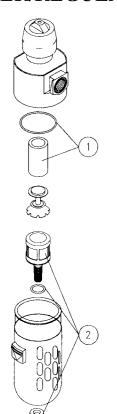
ITEM #	DESCRIPTION	PART#
1	EXHAUST FLANGE	METL020Y
2	GROUND LUG	ELA051
3	RUBBER FOOT	HDWR025
4*	LUBRICATOR	WL020
5*	FILTER/REGULATOR	WL040
6	PRESSURE GAUGE	GA20160B
7	INLET FITTING	QDH5PL8M
8*	MUFFLER	COMPA001
9*	EXHAUST FILTER ELEMENT	WL008A
10	MAINTENANCE PORT	ST12PLA
11	HOUSING	METL038Y
**	BLOWER WHEEL	METL039
12	INTAKE FLANGE	METL040Y
13	AIR MOTOR	MTR013

- \* SEE FOLLOWING PAGE FOR PARTS BREAKDOWN
- \*\* LOCATED INSIDE BLOWER HOUSING

MOTOR TYPE	4 HP (3.0 kw) pneumatic (Intrinsically safe)	
FUNCTIONAL	1st Stage: Particulate/water filter with combination air pressure regulator	
COMPONENTS	and gauge, 2nd stage: In-line lubricator, discharge exhaust oil filter and	
	noise suppressing muffler.	
PRESSURE	100 TO 10	
REQUIRED	10-100psi	
AIR CONSUMPTION	10-100cfm	
FLOW RATES	Free Air: 1500 at minimum psi and cfm - 3000 at maximum psi and cfm	
	25 ft. Duct with One 90 degree bend: 1040 at minimum psi and cfm	
	1725 at maximum	
INLET/OUTLET SIZE	8" Diameter (203 mm)	
NOISE LEVEL	82dbA at 3 ft. @ 80psi inlet pressure	

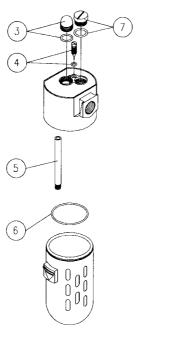
#### MODEL SVB-A8 BLOWER COMPONENTS AND PARTS ASSEMBLY

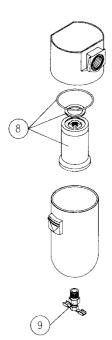
# FILTER/REGULATOR



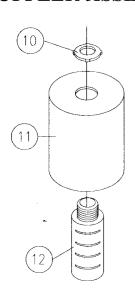
## **LUBRICATOR**





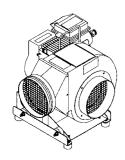


#### **MUFFLER ASSEMBLY**



	To the second se	
ITEM #	DESCRIPTION	PART#
1	ELEMENT/O-RING	WL040B
2	AUTO-DRAIN ASSEMBLY	WL024
3	SIGHT DOME/O-RING	WL020SD
4	NEEDLE VALVE/O-RING	WL020A
5	SIPHON TUBE	WL020BF
6	BOWL O-RING	WL107
7	FILL PLUG/O-RING	WL107
8	ELEMENT/O-RING	BB50-C
9	MANUAL DRAIN COCK	BR2DCM
10	RETAINING NUT	ELA007
11	MUFFLER COVER	METL046AK
12	MUFFLER	COMPA001

# GENERAL SETUP & OPERATION, GASOLINE AND PROPANE BLOWER SERIES MODEL SVB-G8 & SVB-G8P



# CAUTION:

Gasoline engines produce carbon monoxide. The exhaust snorkel <u>MUST</u> be used while operating this blower. Do not operate gas or propane blowers in explosive or potentially hazardous environments.

<u>All new</u> gasoline and propane blowers must be run for 30 minutes to burn off residual oils and paint residue before placing them into service.

#### STEP 1)

Operate blower <u>in the vertical position only</u>. Place in a clean fresh air environment away from toxic gases and dust. Set blower a minimum of 5 ft. from the manhole opening. *Note: Inspect blower for damaged or worn parts. Inspect all ducting and couplings for possible air leaks prior to blower operation.* 



Note: Air quality of the confined space should be tested prior to ventilation. If air quality of the confined space is unacceptable, consult a trained professional.

Install exhaust hose assembly securely to pipe union on the engine muffler. Locate end of exhaust snorkel down wind and away from blower intake and manhole area as shown below. Periodically check muffler union to assure a tight connection. **DO NOT PICK UP BLOWER USING**MUFFLER ASSEMBLY AS A HANDLE!! SEVERE BURNS MAY RESULT!!





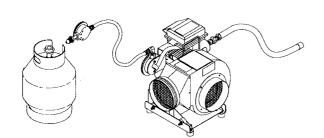
MANHOLE

#### STEP 3)

Install duct cuff to exhaust flange and tighten cinch strap. Keep bends and kinks in ducting to a minimum to maximize air flow. <u>DO NOT</u> run gasoline or propane blowers without attaching ventilation ducting as excessive vibration may cause blower damage.

#### STEP 4) ENGINE START UP

Check engine oil level prior to operation. (Fill to proper level if necessary). **<u>DO NOT</u>** overfill.



#### STEP 5)

before refueling.

For Propane Models, connect regulator to propane tank as shown at left. Propane gas models are supplied with a liquid propane conversion kit. <u>DO NOT</u> substitute components or regulation device.

For Gasoline Models, check fuel level and fill with unleaded gasoline. *Note: Allow engine to cool* 

#### STEP 6)

Check engine intake filter periodically and replace if necessary.

#### STEP 7)

Review and follow ALL safety precautions and run procedures found in the enclosed Briggs and Stratton/Honda manual prior to starting. (Some gasoline units are supplied with Honda engines as an option, Model SVB-G8H.)

#### STEP 8)

Start engine by placing the throttle adjustment at idle and choke adjustment at "START" position. Pull start cord. Once started, return choke to "RUN" position. Caution: Do not exceed throttle "STOP" setting at maximum adjustment as serious blower wheel and engine damage could result.

#### **SHUTDOWN**



Allow exhaust snorkel pipe to cool before removing from engine.

Heat resistant gloves are recommended when handling the exhaust hose.

- Insure that all workers are removed from the confined space site.
- Shut off blower. Do not move choke control to CHOKE to stop engine; backfire or engine damage may occur. Move throttle control to "SLOW" position; then move stop control to "STOP" position.

#### **MAINTENANCE**

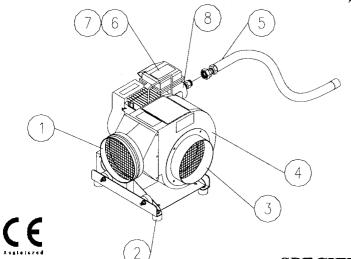
Note: All maintenance should be completed with unit switched off and cooled down.

- Keep blower motor dry and free from contaminants and dust. Engines stored over 30 days need to be protected or drained of fuel to prevent gum from forming in fuel system.
- Check oil level and intake filters regularly. Be sure oil level is full and filters are well maintained. Check oil level every 5 hours or daily before staring engine.

#### TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Excessive vibration	Air intake blocked	Turn blower off and clear debris from intake
	Possible internal damage	Turn blower off and inspect fan blades, shaft, and housing for debris, damage, and loose screws.  Note: Never run blower without installing duct on the exhaust flange.
	Possible external damage	Turn fan off and inspect housing
Engine will not start	No fuel	Refuel
• -	Check choke settings	Check propane hose connection
	Fouled or faulty spark plug	Remove, clean, re-gap, or replace spark plug

## **MODEL SVB-G8 - Gasoline Blower**



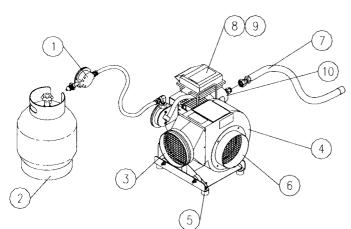
ITEM #	DESCRIPTION	PART#
1	EXHAUST FLANGE	METL020Y
2	RUBBER FOOT	HDWR025
3	INLET FLANGE	METL040Y
4	HOUSING	METL038Y
*	BLOWER WHEEL	METL039
5	MUFFLER ASSEMBLY	SVB-G8MNS
6	INTAKE PREFILTER (SPONGE)	MTRA001
7	INTAKE FILTER (PAPER)	MTRA002

<sup>\*</sup>LOCATED INSIDE BLOWER HOUSING

#### **SPECIFICATIONS**

MOTOR TYPE	3.5 HP (2.6 kw) Briggs/Stratton (Standard)	
	4.0 HP (3 kw) Honda Gasoline (Optional)	
FUEL	Unleaded Regular Gasoline	
FUEL CAPACITY	2.5 Hours	
RUN TIME AT IDLE		
INLET/ OUTLET		
SIZE	8" Diameter (203 mm)	
FLOW RATES	Free Air: 1500 min, 3000cfm max	
	25 ft. Duct with One 90 degree bend: 1040 Low/1750	
	High	
WEIGHT	47 lbs.	
NOISE LEVEL	92.5 dbA at 3 ft.	

# **MODEL SVB-G8P - Propane Blower**



ITEM #	DESCRIPTION	PART#
1	PROPANE ADAPTER KIT	MTR012
2	PROPANE TANK	SVB-PT
3	EXHAUST FLANGE	METL020Y
4	BLOWER HOUSING	METL038Y
5	RUBBER FOOT	HDWR025
6	INLET FLANGE	METL040Y
*	BLOWER WHEEL	METL039
7	MUFFLER ASSEMBLY	SVB-G8MNS
8	INTAKE PREFILTER (SPONGE)	MTRA001
9	INTAKE FILTER (PAPER)	MTRA002

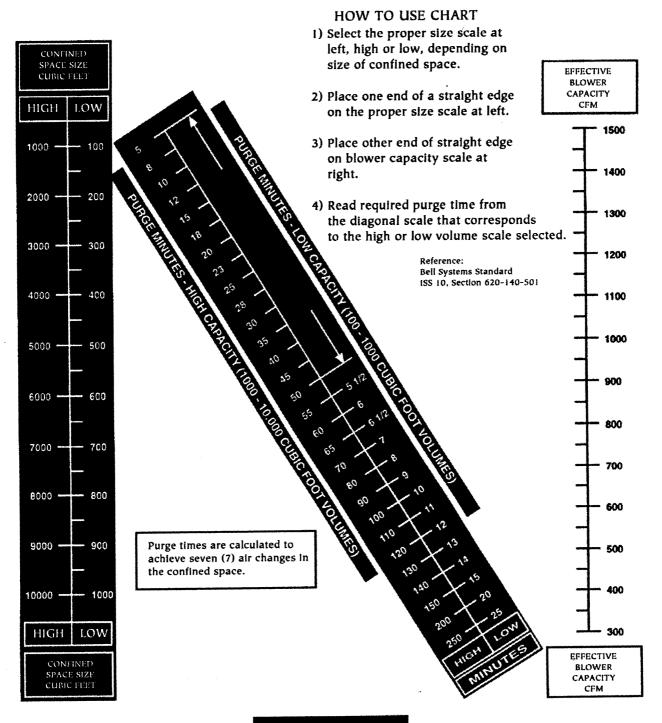
<sup>\*</sup>LOCATED INSIDE BLOWER HOUSING

### **SPECIFICATIONS**

CE

MOTOR TYPE	3.5 HP (2.6 kw) Briggs/Stratton	
FUEL	Liquid Propane	
FUEL CAPACITY	20 lbs./7.45kg 4.2 Hours	
RUN TIME AT		
IDLE		
INLET/ OUTLET		
SIZE	8" Diameter (203 mm)	
FLOW RATES	Free Air: 1500 min 3000cfm max	
	25 ft. Duct with One 90 degree bend: 1040 Low/1750	
	High	
WEIGHT	47 lbs.	
NOISE LEVEL	92.5 dbA at 3 ft.	

## **ESTIMATING APPROXIMATE PURGE TIMES**



#### SPECIAL NOTES

- 1) Air quality of the confined space should be tested prior to ventilation.
- 2) Ventilate confined space for the minimum times as determined in the above chart and then retest air.
- 3) If toxic (combustible) gases or low oxygen is encountered, increase purge times by 50%.
- 4) If 2 blowers are used, add the two capacities, then proceed with the "How to use chart" above.
- 5) Effective blower capacity is measured with one or two 90 degree bends in 8\* diameter 25 ft. blower hose.